

Trend Study 1-3-01

Study site name: Rosebud Hills.

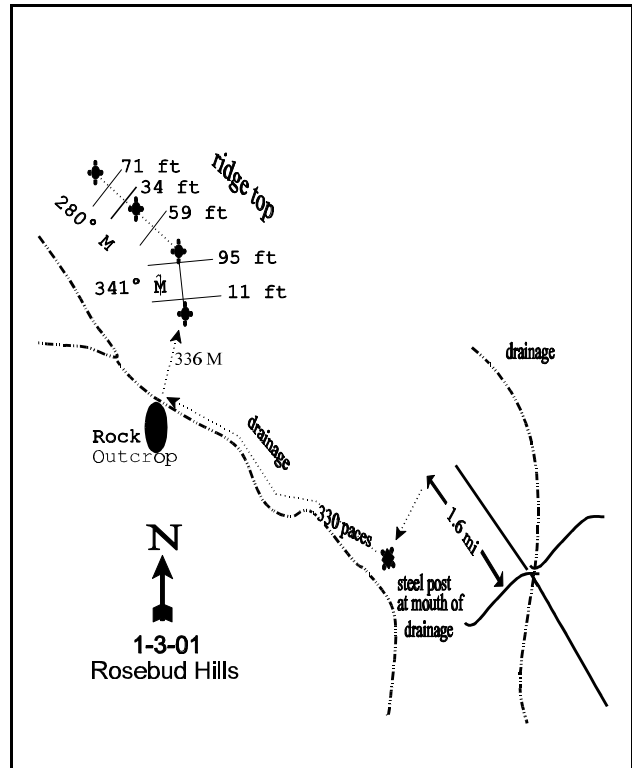
Vegetation type: Black Sagebrush.

Compass bearing: frequency baseline 341 degrees magnetic.

Frequency belt placement: line 1 (11 & 95ft), line 2 (59ft), line 3 (34 & 71ft).

LOCATION DESCRIPTION

Traveling towards Rosette (north) on U-30, proceed 0.1 miles past mile marker 34 and turn left (west). Proceed through a gate and travel 1.2 miles to a fork. Turn left and proceed 0.3 miles southwest to another fork. Turn right and proceed 1.6 miles to end of the road, crossing a wash and following the ridgetop. From the end of the road walk to the mouth of the drainage to the left. Start up the drainage and find a green steel stake near the opening of the drainage. Beginning at the stake, proceed approximately 330 paces up the drainage bottom and note a large rock outcrop on the left. If the drainage has divided, you have gone too far. From the outcrop, take a bearing of 336 degrees magnetic and proceed 75 yards up the slope to the 0-foot stake of the baseline. The 0-foot stake is marked with browse tag number 7907. The baseline runs south to north at 341 degrees magnetic. Lines 2 and 3 change directions and run 280 degrees magnetic. Lines 2 and 3 change directions and run 280 degrees magnetic.



Map Name: Warm Springs Hill

Diagrammatic Sketch

Township 11N, Range 15W, Section 30

UTM 4613482 N, 282590 E

DISCUSSION

Trend Study No. 1-3

The Rosebud Hills study is located on the east side of the Rosebud Hills. In the past it was thought to be a major concentration area for wintering deer. Evidence for this conclusion was furnished by the presence of 12 winter-killed carcasses located within a 200 yard radius of the study site during the 1984 readings. Pellet groups were abundant, but appear to be quickly dispersed by overland water flow. A pellet group transect read on site in 2001 estimated only 12 deer days use/acre (30 days use/ha) and 1 elk day use/acre (3 days use/ha). This area is typical foothill terrain, occupied primarily by black sagebrush with scattered pockets of Utah juniper on the ridges and canyon bottoms. Vegetative production for this vegetative type (black sagebrush-grass) was inventoried and determined in 1970 to have an air dry weight of 1,194 pounds per acre. The study site has a moderately steep (40%) south slope and an elevation of 5,720 feet.

Soils on the study site, including most of the surrounding area, are extremely rocky. It is a sandy clay-loam with a slightly alkaline pH (7.8). Site potential could be affected by the low amounts of phosphorus in the soil (5.4 ppm) where values less than 10 ppm can affect plant growth and development. Average rooting depth was estimated at almost 17 inches during the 1996 reading. The underlying rock appears to be fractured in some areas as some deeper measurements were encountered (over 20 inches). Weathered-in-place, soil is derived from parent material composed primarily of metamorphic rock, probably quartzite, with lesser amounts of a sedimentary shale-like rock. Ground cover from vegetation or litter is poor and erosion is occurring. Signs of erosion include the amount of exposed rock, erosion pavement, and pedestalling of perennial plants. The soil surface has an almost "armored" appearance with rock and pavement covering more than half of the ground surface (65% in 2001).

Browse composition is dominated by an evenly spaced, but low-growing stand of black sagebrush numbering approximately 7,320 plants/acre in 1996. Currently ('01), the density is estimated at 7,600 plants/acre. Of these, 6% are young, 71% are mature, and 23% are decadent. Individual shrubs are regularly spaced and separated by interspaces largely devoid of vegetation. Use was very heavy in 1984, when 91% of the sagebrush was classified as heavily hedged (>60% of twigs browsed). Percent decadence was also high then at 47%. Conditions were similar in 1990, except use was mostly light. Use was moderate in 1996 and light in 2001.

Other shrubs occurring on the study area include: shadscale saltbush, narrowleaf low rabbitbrush, Nevada ephedra, spiny horsebrush, grey horsebrush, spiny hopsage, Utah juniper, a few antelope bitterbrush, and big sagebrush that are intermediate in appearance between basin and Wyoming big sage. The latter two species, however, are very heavily utilized because they are preferred and in such low numbers. They could disappear from the site over time. Shadscale is still the second most productive shrub on the site, providing 12% of the shrub cover in 2001. Utilization was moderate to heavy in 1996, but light in 2001.

Herbaceous composition is depleted and is of little value either for forage or soil protection. Grasses combined to produce only 1.5% cover in 1996, and 5% cover in 2001. Forbs continue to combine for less than 1% cover. Perennial or biennial plants are scarce and are limited to a few low-growing milkvetches, cryptantha, longleaf phlox, and grasses such as Bottlebrush squirreltail, Indian ricegrass, Sandberg bluegrass, and sparse clumps of bearded bluebunch wheatgrass in the canyon bottom.

1984 APPARENT TREND ASSESSMENT

Soil is very shallow and rocky. A long history of erosion has removed much of the surface soil leaving an almost "armored" soil surface composed of small to medium sized rocks and erosion pavement. Trend appears to be in a state of decline but most of the damage has already occurred. Vegetative condition is poor but essentially stable. The herbaceous component is depleted and unlikely to improve or deteriorate further.

The black sagebrush population is maintaining itself through reproduction. Seedlings become established in shelter provided either by larger rocks or directly underneath shrub crowns.

1990 TREND ASSESSMENT

The lightly utilized south-facing slope is dominated by black sagebrush and shadscale. Both populations appear relatively stable. There is almost a 15% canopy cover from the low-growing sagebrush. The site supports very low diversity and production for perennial herbaceous plants. Perennial grass sum of nested frequency and quadrat frequency indicates a slight overall decline. Forbs are already at very low frequencies (almost non-existent) with not much change. The high percentage of erosion pavement and active sheet erosion is normal for this type of site.

TREND ASSESSMENT

soil - stable, but poor condition (3)

browse - stable (3)

herbaceous understory - down slightly and poor condition (2)

1996 TREND ASSESSMENT

Ground cover characteristics are similar to those of 1990. Soil conditions are poor with little bare soil being exposed. Soil depth estimates made in 1996 report effective rooting depth to be almost 17 inches with occasional measurements over 20 inches. Soil temperature at an average depth of 15 inches is moderately high at 64°F, making this slope a harsh site for seedling establishment with more than 60% rock cover and moderately high soil surface temperatures during the summer months. This helps explain why this area is dominated by black sagebrush instead of mountain big sagebrush. The browse trend is slightly up with increased densities of black sagebrush and shadscale. Current utilization is heavier on these shrubs than in 1990, but not as heavy as 1984. Percent decadence is lower and vigor is good. The herbaceous understory is still deficient. Trend is slightly up, due to an increase in the sum of nested frequency of grasses and forbs.

TREND ASSESSMENT

soil - stable but in poor condition (3)

browse - slightly up (4)

herbaceous understory - slightly up but poor (4)

2001 TREND ASSESSMENT

Ground cover characteristics are similar to those of 1996. Soil conditions continue to be poor but little bare soil is exposed due to the extremely high rock and pavement cover. The browse trend is fairly stable for black sagebrush and shadscale. Current utilization is mostly light. Percent decadence is slightly higher yet the population still shows good vigor. The herbaceous understory continues to be deficient but now approaches 6% cover. Trend is stable for perennial species. Sum of nested frequency of perennial grasses declined slightly but neither Indian ricegrass or bottlebrush squirreltail declined significantly. These two species account for 37% of the total herbaceous cover. Nested frequency of annual cheatgrass did increase significantly. Sum of nested frequency of perennial forbs also declined slightly but they provide only 2% of the herbaceous cover. Annual forbs increased in frequency.

TREND ASSESSMENT

soil - stable but in poor condition (3)

browse - stable (3)

herbaceous understory - stable but in poor condition (3)

HERBACEOUS TRENDS --

Herd unit 01 , Study no: 3

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
G	Bromus tectorum (a)	-	-	_a 119	_b 192	-	-	48	75	.61	3.06
G	Oryzopsis hymenoides	23	31	30	24	14	16	17	11	.42	1.20
G	Sitanion hystrix	_b 68	_a 17	_a 40	_a 36	33	7	22	21	.42	.87
Total for Annual Grasses		0	0	119	192	0	0	48	75	0.61	3.06
Total for Perennial Grasses		91	48	70	60	47	23	39	32	0.85	2.07
Total for Grasses		91	48	189	252	47	23	87	107	1.47	5.13
F	Arabis spp.	-	-	-	1	-	-	-	1	-	.00
F	Astragalus beckwithii	2	-	-	-	1	-	-	-	-	-
F	Astragalus newberryi	1	1	5	-	1	1	2	-	.01	-
F	Castilleja linariaefolia	-	-	7	-	-	-	3	-	.18	-
F	Cryptantha spp.	_A -	_a 1	_b 20	_a -	-	1	9	-	.10	-
F	Eriogonum cernuum (a)	-	-	50	-	-	-	22	-	.38	-
F	Gilia spp. (a)	-	-	_a 8	_b 83	-	-	3	37	.01	.27
F	Lappula occidentalis (a)	-	-	_a 4	_b 37	-	-	2	18	.01	.11
F	Oenothera caespitosa	_a -	_a -	_b 12	_b 9	-	-	6	6	.22	.10
F	Phlox longifolia	-	-	6	1	-	-	2	1	.03	.00
F	Sphaeralcea coccinea	-	-	1	-	-	-	1	-	.00	-
F	Unknown forb-perennial	-	-	4	-	-	-	2	-	.01	-
Total for Annual Forbs		0	0	62	120	0	0	27	55	0.40	0.38
Total for Perennial Forbs		3	2	55	11	2	2	25	8	0.57	0.11
Total for Forbs		3	2	117	131	2	2	52	63	0.98	0.50

Values with different subscript letters are significantly different at alpha = 0.10 (annuals excluded)

BROWSE TRENDS --

Herd unit 01 , Study no: 3

Type	Species	Strip Frequency		Average Cover %	
		'96	'01	'96	'01
B	Artemisia nova	98	93	14.77	13.89
B	Artemisia spinescens	1	2	-	-
B	Atriplex confertifolia	64	60	2.24	1.70
B	Chrysothamnus viscidiflorus stenophyllus	33	47	.86	2.36
B	Ephedra nevadensis	6	5	.06	.53
B	Juniperus osteosperma	3	4	.44	1.37
B	Kochia americana	3	5	-	.03
B	Tetradymia nuttallii	4	9	.03	.33
Total for Browse		212	225	18.40	20.24

BASIC COVER --

Herd unit 01 , Study no: 3

Cover Type	Nested Frequency		Average Cover %			
	'96	'01	'84	'90	'96	'01
Vegetation	256	263	1.25	4.50	20.42	27.07
Rock	370	343	43.00	54.75	45.49	39.50
Pavement	349	362	14.00	19.25	15.93	25.78
Litter	361	250	19.25	13.75	15.79	8.97
Cryptogams	81	11	.50	0	.43	.10
Bare Ground	205	196	22.00	7.75	3.59	6.07

SOIL ANALYSIS DATA --

Herd Unit 01, Study no: 03, Rosebud Hills

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
16.7	64.0 (14.9)	7.8	50.6	26.1	23.4	.81	5.4	208.0	.64

PELLET GROUP FREQUENCY --

Herd unit 01 , Study no: 3

Type	Quadrat Frequency		Pellet Transect	
			Pellet Groups per Acre	Days Use per Acre (ha)
	'96	'01	'01	'01
Rabbit	13	4	278	N/A
Elk	-	-	17	1 (3)
Deer	30	6	157	12 (30)

BROWSE CHARACTERISTICS --

Herd unit 01 , Study no: 3

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Artemisia nova																	
S	84	47	2	-	-	-	-	-	-	-	49	-	-	-	1633		49
	90	30	-	-	-	-	-	-	-	-	30	-	-	-	1000		30
	96	24	-	-	2	-	-	-	-	-	26	-	-	-	520		26
	01	8	-	-	-	-	-	1	-	-	9	-	-	-	180		9
Y	84	5	2	-	-	-	-	-	-	-	7	-	-	-	233		7
	90	49	2	-	-	-	-	-	-	-	49	1	1	-	1700		51
	96	24	15	2	1	1	-	-	-	-	43	-	-	-	860		43
	01	19	-	-	-	-	-	2	-	-	21	-	-	-	420		21
M	84	-	3	85	-	-	-	-	-	-	69	-	19	-	2933	14 23	88
	90	62	-	-	-	-	-	-	-	-	62	-	-	-	2066	9 18	62
	96	8	99	40	-	107	3	-	-	-	252	-	5	-	5140	10 24	257
	01	271	-	-	-	-	-	-	-	-	271	-	-	-	5420	8 21	271
D	84	-	6	79	-	-	-	-	-	-	58	-	27	-	2833		85
	90	75	2	1	1	-	-	-	-	-	65	2	7	5	2633		79
	96	2	42	6	-	14	2	-	-	-	55	-	-	11	1320		66
	01	78	3	-	7	-	-	-	-	-	61	-	2	25	1760		88
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	740		37
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	840		42
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
'84		06%			91%			26%			+ 6%						
'90		02%			.52%			07%			+13%						
'96		76%			14%			04%			+ 4%						
'01		.78%			00%			07%									
Total Plants/Acre (excluding Dead & Seedlings)												'84	5999	Dec:	47%		
												'90	6399		41%		
												'96	7320		18%		
												'01	7600		23%		

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia spinescens																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	-	3	-	-	-	-	-	-	-	-	3	-	-	60	3	4	3
	01	-	-	-	-	-	-	2	-	-	-	2	-	-	40	13	13	2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		100%			00%			00%			-33%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	0		-			
												'96	60		-			
												'01	40		-			
Atriplex confertifolia																		
S	84	1	-	-	-	-	-	-	-	-	1	-	-	-	33			1
	90	2	-	-	1	-	-	-	-	-	3	-	-	-	100			3
	96	17	-	-	-	-	-	-	-	-	17	-	-	-	340			17
	01	-	-	-	1	-	-	-	-	-	1	-	-	-	20			1
Y	84	4	-	-	-	-	-	-	-	-	4	-	-	-	133			4
	90	3	-	-	-	-	-	-	-	-	3	-	-	-	100			3
	96	35	26	4	4	17	1	-	-	-	87	-	-	-	1740			87
	01	5	-	-	11	-	-	1	-	-	17	-	-	-	340			17
M	84	21	2	1	-	-	-	-	-	-	24	-	-	-	800	8	13	24
	90	13	-	-	-	-	-	-	-	-	13	-	-	-	433	8	9	13
	96	14	21	9	26	76	28	-	-	6	180	-	-	-	3600	6	12	180
	01	15	3	2	107	-	-	10	-	-	137	-	-	-	2740	4	8	137
D	84	10	2	1	-	-	-	-	-	-	12	-	1	-	433			13
	90	16	-	-	-	-	-	-	-	-	10	-	1	5	533			16
	96	1	-	-	1	8	1	-	-	-	8	-	-	3	220			11
	01	4	-	1	37	-	-	2	-	-	33	-	-	11	880			44
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	160			8
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	120			6
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		10%			05%			02%			-22%							
'90		00%			00%			19%			+81%							
'96		53%			18%			01%			-29%							
'01		02%			02%			06%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	1366	Dec:	32%			
												'90	1066		50%			
												'96	5560		4%			
												'01	3960		22%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus stenophyllus																		
S	84	1	-	-	-	-	-	-	-	-	1	-	-	-	33		1	
	90	2	-	-	-	-	-	-	-	-	2	-	-	-	66		2	
	96	7	-	-	-	-	-	-	-	-	7	-	-	-	140		7	
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
Y	84	5	-	-	-	-	-	-	-	-	5	-	-	-	166		5	
	90	7	-	-	1	-	-	-	-	-	8	-	-	-	266		8	
	96	4	-	-	1	-	-	-	-	-	5	-	-	-	100		5	
	01	9	-	-	-	-	-	-	-	-	9	-	-	-	180		9	
M	84	8	2	2	-	-	-	-	-	-	12	-	-	-	400	6	8	12
	90	10	-	-	-	-	-	-	-	-	10	-	-	-	333	8	11	10
	96	36	-	-	3	3	-	-	-	-	42	-	-	-	840	8	15	42
	01	51	-	-	-	-	-	-	-	-	51	-	-	-	1020	8	16	51
D	84	1	1	-	-	-	-	-	-	-	2	-	-	-	66		2	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	4	-	-	-	-	-	2	-	-	5	-	-	1	120		6	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		16%			11%			00%			- 5%							
'90		00%			00%			00%			+36%							
'96		06%			00%			00%			+29%							
'01		00%			00%			02%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	632	Dec:	10%			
												'90	599		0%			
												'96	940		0%			
												'01	1320		9%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Ephedra nevadensis																		
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	1	-	-	-	-	-	-	-	-	1	-	-	33		1	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	1	-	-	-	-	-	-	-	-	-	1	-	-	20		1	
M	84	-	-	2	-	1	-	-	-	-	2	-	1	-	100	10	13	
	90	-	-	1	1	-	-	-	-	-	2	-	-	-	66	11	14	
	96	-	-	3	-	1	3	-	-	-	7	-	-	-	140	11	16	
	01	2	-	1	-	-	-	-	-	-	3	-	-	-	60	11	23	
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	1	-	-	-	-	-	-	1	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		33%			67%			33%			- 1%							
'90		33%			33%			00%			+29%							
'96		14%			86%			00%			-29%							
'01		00%			40%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	100	Dec:	0%			
												'90	99		0%			
												'96	140		0%			
												'01	100		20%			
Juniperus osteosperma																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	33		1	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
M	84	-	1	-	-	-	-	1	-	-	2	-	-	-	66	60	66	
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	33	67	87	
	96	3	-	-	-	-	-	-	-	-	3	-	-	-	60	-	-	
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20	-	-	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		50%			00%			00%			+ 0%							
'90		00%			00%			00%			- 9%							
'96		00%			00%			00%			+25%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	66	Dec:	-			
												'90	66		-			
												'96	60		-			
												'01	80		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Kochia americana																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	01	4	-	-	-	-	-	-	-	-	4	-	-	-	80		4	
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	96	4	-	-	1	-	-	-	-	-	5	-	-	-	100	6	5	
	01	1	-	-	-	-	-	1	-	-	2	-	-	-	40	5	2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%			+ 0%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)														'84	0	Dec:	-	
														'90	0		-	
														'96	120		-	
														'01	120		-	

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Tetradymia nuttallii																		
S	84	1	-	-	-	-	-	-	-	-	1	-	-	-	33		1	
	90	6	-	-	-	-	-	-	-	-	6	-	-	-	200		6	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	84	10	-	-	-	-	-	-	-	-	10	-	-	-	333		10	
	90	3	-	-	-	-	-	-	-	-	3	-	-	-	100		3	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
M	84	2	-	-	-	-	-	-	-	-	2	-	-	-	66	5	2	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	96	-	-	-	2	1	-	-	-	-	3	-	-	-	60	20	29	
	01	-	-	-	-	-	-	2	-	-	2	-	-	-	40	21	30	
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	1	-	-	-	-	-	-	-	-	-	-	-	1	20		1	
	01	4	-	-	2	-	-	4	-	-	4	-	1	5	200		10	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			-75%							
'90		00%			00%			00%			-20%							
'96		25%			00%			25%			+69%							
'01		00%			00%			46%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	399	Dec:	0%			
												'90	100		0%			
												'96	80		25%			
												'01	260		77%			
Tetradymia spinosa																		
M	84	1	-	-	-	-	-	-	-	-	1	-	-	-	33	15	19	
	90	1	-	-	-	-	-	-	-	-	-	-	1	-	33	14	24	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			+ 0%							
'90		00%			00%			100%										
'96		00%			00%			00%										
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	33	Dec:	-			
												'90	33		-			
												'96	0		-			
												'01	0		-			